

Notice of Allowability

Application No.

10/618,591

Examiner

Walter F. Briney III

Applicant(s)

TAKADA, MASASHI

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 03 March 2005 in response to a Non-Final office action.
2. ☒ The allowed claim(s) is/are 1 and 3-17.
3. ☒ The drawings filed on 15 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

1. Claims 1 and 3-17 allowed.

Claim 1 is limited to *an echo canceller using an adaptive filter to generate an echo replica signal from a received far-end signal and using the echo replica signal to cancel and echo component in a near-end signal, thereby generating a transmit signal, the adaptive filter adapting to changes in the echo path by updating tap coefficients.* As shown in the Non-final office action filed 03 November 2004, Basburg-Ertem anticipated all limitations of claim 1. The current amendment has rewritten claim 1 to include those limitations originally presented in claim 2. While these were shown in the Non-Final office action to be anticipated by Basburg-Ertem, careful reconsideration of those rejections reveals that Basburg-Ertem neither anticipates nor makes obvious the limitations originally presented in claim 2.

In particular, the echo canceller disclosed by Basburg-Ertem includes two double-talk detectors. These are depicted in figure 6 as an encoder (18), which includes a voice-activity detection (VAD) module, and a secondary double-talk detector (70). The examiner concluded that the VAD module of the encoder (18) corresponds to the double-talk detector of the claim, and that the secondary double-talk detector (70) corresponds to the echo path change detector of the claim. The correspondence between the secondary double-talk detector (70) and the echo path change detector is made readily clear by considering equations 6-8 of Basburg-Ertem with the echo path

change algorithm disclosed on pages 9 and 10 of the applicant's specification.

However, the limitations originally presented in claim 2 also state that suspension of tap updates is effected by both the double-talk detector detecting a double-talk state and the echo path change detector not detecting an echo path change. Furthermore, tap coefficients are updated even when the double-talk detector detects a double-talk state if the echo path change detector does detect an echo path change.

The system of Basburg-Ertem in contrast does not anticipate at least the *suspending or abating of tap coefficients when the double-talk detector detects the double-talk state, provided the echo path change detector does not detect echo path change*, which, as the applicant correctly indicates, suggests a simultaneous detection by the control unit. See page 12 lines 17-20 of the applicant's current response. This is clear from the disclosure of Basburg-Ertem that states that only one double-talk detector is used in the double-talk decision at any time. See paragraph 51 of Basburg-Ertem. As such, it never matters what state the non-active detector is in. Thus, claim 1 as amended to include those limitations originally presented in claim 2 is allowable over Basburg-Ertem.

Claims 3-7 depend from claim 1, and are allowable over Basburg-Ertem for at least the same reasons.

Claim 8 was objected to in the Non-Final office action filed 03 November 2004 as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all limitations of the base claim and any interceding claims.

The applicant has overcome this rejection by performing said step of rewriting. Thus, claim 8 is allowable over Basburg-Ertem.

Claim 9 is dependent on claim 9, and is allowable over Basburg-Ertem for at least the same reasons.

Claim 10 is limited to *a method of controlling the updating of tap coefficients in an adaptive filter in an echo canceller that uses the adaptive filter to generate an echo replica signal from a received far-end signal and uses the echo replica signal to cancel echo from a near-end signal; thereby generating a transmit signal.* For reasons analogous to those presented supra with respect to claim 1, claim 10 is allowable over Basburg-Ertem.

Claims 11-17 depend from claim 10, and are allowable over Basburg-Ertem for at least the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
5/12/05



SINH TRAN
SUPERVISORY PATENT EXAMINER